Biodiversity Data Journal 13: e155581
doi: 10.3897/BDJ.13.e155581

Taxonomy & Inventories

An updated list of the genus *Hypena* Schrank (Lepidoptera, Erebidae) from Korea with five additional records to the fauna

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Academic editor: Bong-Kyu Byun

Received: 11 Apr 2025 | Accepted: 23 Apr 2025 | Published: 02 May 2025

Citation: Jin D, Kim S-S, Shin B, Choi S-W (2025) An updated list of the genus *Hypena* Schrank (Lepidoptera, Erebidae) from Korea with five additional records to the fauna. Biodiversity Data Journal 13: e155581. https://doi.org/10.3897/BDJ.13.e155581

Abstract

Background

The paper provides the updated checklist of the genus *Hypena* Schrank from Korea. This genus is one of the largest genera within the Noctuoidea comprising more than 680 species worldwide and the genus is the monophyletic group based on the morphological characters. The external examination along with the genitalia examination and DNA barcoding could reveal the diversity of the genus in Korea.

New information

In this study, we examined a total of 192 specimens and barcoded 16 species and listed a total of 29 species of *Hypena* including five new additions, *Hypena tamsi* Filipjev (1927), *Hypena obacerralis* Walker (1859), *Hypena pulverulenta* Wileman (1911), *Hypena perspicua* Leech (1900) and *Hypena mandarina* Leech (1900) to the Korean fauna. We provided the detailed distribution of each species of the genus across South

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Korea and the photographs of adults and genitalia. In addition, the monophyly of the genus was also confirmed using two outgroup species of Herminiinae. This study significantly contributes to the knowledge of erebid fauna in Korea and the phylogenetic relationship amongst the species of the genus.

Keywords

checklist, external morphology, genitalia, DNA barcoding, phylogeny

Introduction

The genus *Hypena* Schrank (1802), one of the largest genera within the Noctuoidea, comprises more than 680 species worldwide and is predominant in the Tropics (Lödl 1994). The genus is monophyletic and can be recognised by the morphological characters such as ciliate male antennae, the elongated and obliquely porrect labial palps, the unified ground plan of the wing pattern elements with a prominent postmedial line of forewing and a uniform hindwing, a firm and coarse corium on the dorsal surface of the tuba analis and the hooked and apically acute uncus and the simple valva with a short longitudinal pleat centrally over the basal part (= clavus) in the male genitalia and the simple ostium bursae and the long slender ductus bursae in the female genitalia (Lödl 1994, Lödl 2000, Holloway 2008).

In Korea, the genus was first recorded by Bryk (1949) who recorded five species. Kononenko et al. (1998) listed 22 species of the genus. Recently, Lee et al. (2022) reported *Hypena narratalis* Walker (1859) from a cave in Gangwon Province. The purpose of the present paper is to report five additional species of *Hypena* for the first time in Korea and provide the updated checklist of the genus in Korea with a few notes on the records.

Materials and methods

Specimen preparation

We examined a total of 194 specimens collected from South Korea. Materials were collected using an ultraviolet bucket trap and are now deposited in the Collection of Insects at Mokpo National University (MNU). The collected adults were preserved in a freezer and mounted for examination. Species identification was mainly based on the external morphology of adults including wing pattern elements and genitalia. For genitalia slide preparation, the specimen was prepared for 15-20 min. The scales and tissues were removed, stained with Chlorazol black and mounted on slides in Euparal mounting medium. Photographs of the adults were taken using a Nikon D300 DSLR camera equipped with an AF-S Micro-Nikkor 105 mm f/2.8G IF-ED objective and genitalia were photographed with the built-in digital camera of a Leica S9i stereomicroscope.

The terminology of the adult characteristics, including the genitalia, refers to Lödl (1993). Abbreviations are as follows: GW, Gwangwon-do, GG, Gyunggi-do, GB, Gyungsangbuk-do, GN, Gyungsangnam-do, CB, Chungchungbuk-do, CN, Chungchungnam-do, JB, Jeollabuk-do, JN, Jeollanam-do, JJ, Jeju-do; Gen., Genitalia preparation.

DNA preparation

To examine genetic differences amongst related species, genomic DNA was extracted using the Exgene™ Tissue SV mini kit (GeneAll Biotechnology Co., Ltd., Korea). PCR amplification of a 658 bp segment of the mitochondrial COI gene was performed using a T100™ Thermal Cycler (BioRad, USA), the primers LCO1490 and HCO2198 (Folmer et al. 1994) and GainBlue™ HOT Start Pro Premix, 2x (GainBio, Daejeon, Korea). The PCR procedure adhered to the method outlined by Choi et al. (2021). Purification of the PCR products was carried out using the ExoSAP-IT™ PCR Product Cleanup Reagent (Applied Biosystems, USA) and the samples were sent to Bioneer Co., Ltd. (Daejeon, South Korea) for sequencing. Sequence editing and alignment were conducted using MEGA 11 (Tamura et al. 2021). The resulting COI sequences were identified via NCBI (National Center for Biotechnology Information) and utilised to determine genetic differences amongst species within the genus.

DNA barcoding and phylogeny

Genetic distance and Maximum Likelihood (ML) analyses were carried out using 35 COI sequences obtained from the current study (16 sequences) and NCBI GenBank database (19 sequences, https://www.ncbi.nlm.nih.gov/). Sequence alignment was completed in MEGA 11 (Tamura et al. 2021) using the MUSCLE algorithm (Edgar 2004) under default parameters. Genetic distances were calculated, based on the Kimura 2-parameter model (Kimura 1980) using MEGA 11. ML analysis was performed in IQ-tree version 1.6.2 (Nguyen et al. 2015). An initial model test in IQ-tree determined the optimal model for the dataset and tree robustness was assessed via 1,000 bootstrap replicates. Details, including voucher/specimen IDs and GenBank accession/sequence IDs for the COI barcodes, can be found in the Suppl. material 1.

Checklist of the genus *Hypena* Schrank in Korea

Genus *Hypena* Schrank, 1802

Nomenclature:

Ameltropalpis Mabille, 1884 - Mabille (1884) | *Anepischetos* Smith, 1900 - Smith (1900) | *Apanda* Moore, 1882 - Moore (1882) | *Badausa* Walker, 1863 - Walker (1863) | *Bomolocha* Hübner, 1825 - Hübner (1825) | *Camhypena* Prout, 1927 - Prout (1927) | *Dichromia* Guenée, 1854 - Guenée (1854) | *Erichila* Billberg, 1820 -Billberg (1820) | *Eugrona* Holland, 1894 - Holland (1894) | *Euhyphena* Grote, 1873 - Grote (1873c) |

Harita Moore, 1882 - Moore (1882) | *Herpyzon* Hübner, 1822 - Hübner (1822) | *Lomanaltes* Grote, 1873 - Grote (1873a) | *Macrhypena* Grotte, 1873 - Grote (1873c) | *Mathura* Moore, 1882 -Moore (1882) | *Meghypena* Grote, 1873 - Grote (1873b) | *Nesamiptis* Meyrick, 1899 - Meyrick (1899) | *Ophiuche* Hübner, 1825 - Hübner (1825) | *Peliala* Walker, 1865 - Walker (1865) | *Plathypena* Grote, 1873 - Grote (1873c) | *Placerobela* Turner, 1903 -Turner (1903).

Diagnosis: Antennae minutely ciliated in male; labial palpi large, roughly scaled, the second segment long and porrect, strongly projected beyond frons; frons with long projected tufts. Thorax ventrally with long hairs. Forewing ground colour greyish, brownish or light blackish; medial fascia distinct with slanted postmedial lines; apex depressed, slightly acute; areole present. Hindwings ground colour yellowish or slightly darker than forewing; areole formed between veins 3 and 4; discal dot present. Male genitalia. Uncus long, hooked. Valva with distinct clavus; costa slightly sclerotised, curved or straight. Aedeagus with a bundle of cornuti on globular vesica. Female genitalia. Papillae analis broad; anterior apophyses often long, more than twice the posterior apophyses. Ostium broad, cup-shaped, without sclerotised appendages; ductus bursae broad and shrunken or slender; corpus bursae large, globular without a signum.

Notes: TS: *Phalaena proboscidalis* Linnaeus, 1758. TL: Europe.

Hypena sagitta (Fabricius, 1775)

- http://en.wikipedia.org/wiki/Atypus_affinis

Materials

a. scientificName: *Hypena sagitta*; country: South Korea; stateProvince: GW; county: Samcheok; locality: Dongmak-ri, Geundeok-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/22/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4FB1DF10-1F71-55BD-8955-7DC064BCFA33

b. scientificName: *Hypena sagitta*; country: South Korea; stateProvince: GN; county: Sancheong; locality: Yulhayeon-ri, Sindeung-myeon; verbatimElevation: 322; verbatimCoordinates: 35°24'45.63"N 127°58'13.9"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/24/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 18A922E3-63B3-5D62-9D20-B50CE28EBFDD

Distribution: Korea, Japan, Taiwan, Hong Kong, Macau, India.

Notes: Sugi (1989) first recorded this species in Korea without the locality data. This species is rare and we only examined two specimens in this study (Figs 1a, b, 7a, b).

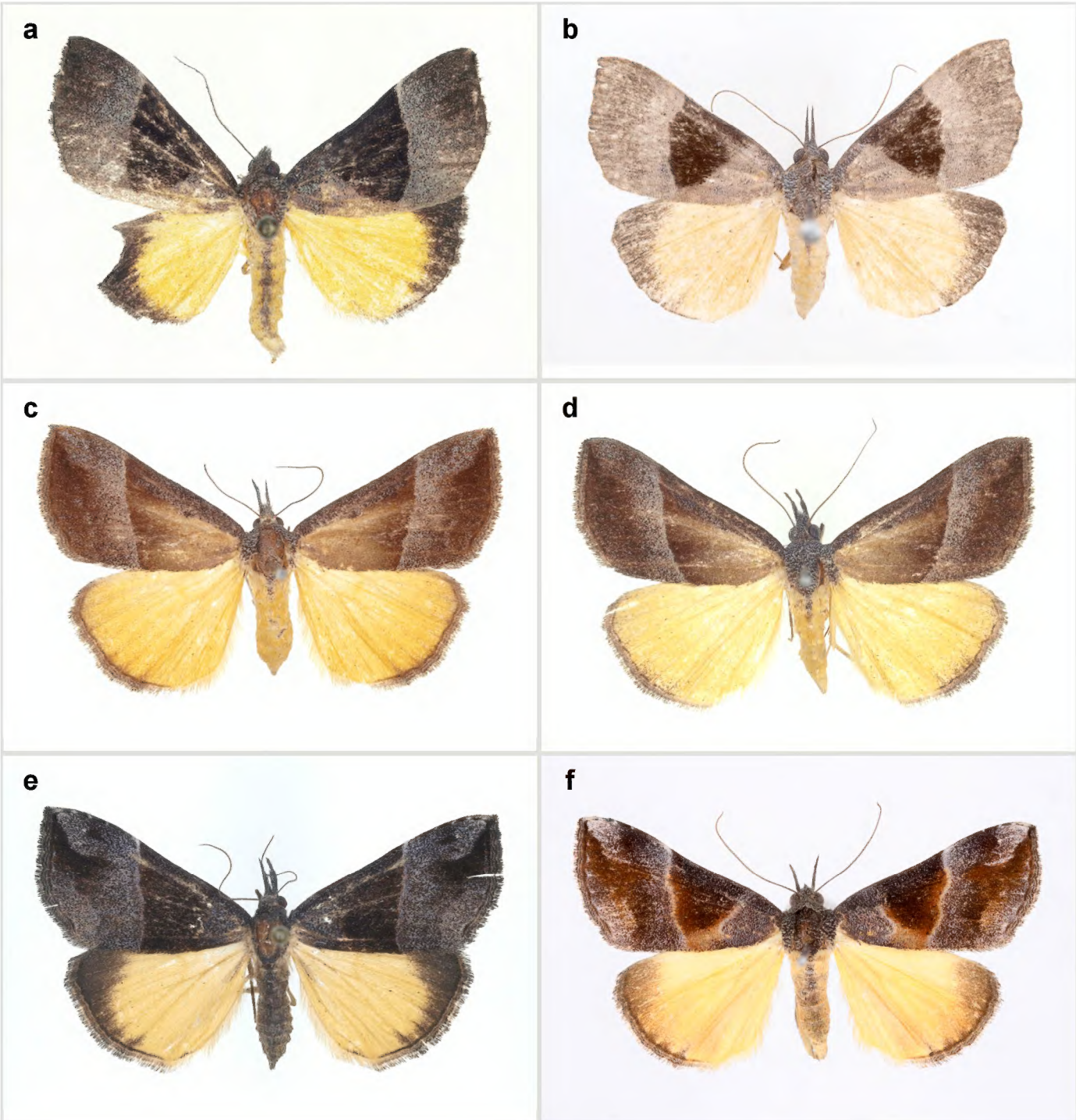

Figure 1.

Adults of *Hypena* from Korea.

a: *Hypena sagitta*, male; doi
b: *Hypena sagitta*, female; doi
c: *Hypena claripennis*, male; doi
d: *Hypena claripennis*, female; doi
e: *Hypena amica*, female; doi
f: *Hypena trigonalis*, male. doi

Hypena claripennis Butler, 1878

Materials

a. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Osang-ri, Amtae-myeon; verbatimElevation: 150; verbatimCoordinates: 34°50'30"N 126°4'38"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2023/08/24; individualCount: 1; sex: male; lifeStage: adult;

recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2AE4EF52-2B52-5B06-BD8F-651DEC0C47FD

b. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Osang-ri, Amtae-myeon; verbatimElevation: 150; verbatimCoordinates: 34°50'30"N 126°4'38"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2023/08/24; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: FF4C7722-2124-51B9-9901-0DD1678C4212

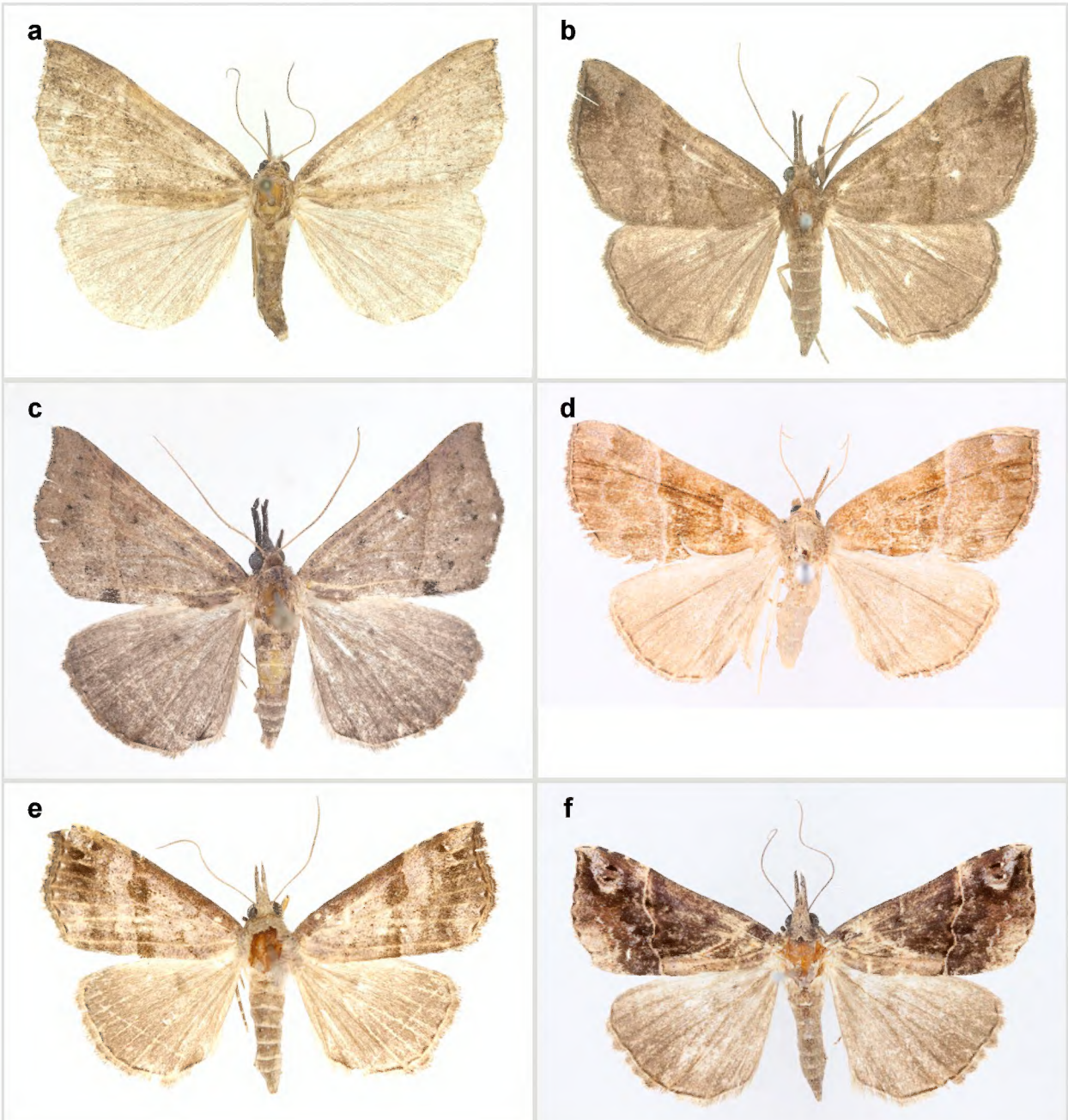

Figure 2.

Adults of *Hypena* from Korea.

a: *Hypena proboscidalis*, female; doi
b: *Hypena tamsi*, male; doi
c: *Hypena strigulatus*, male; doi
d: *Hypena conspersalis*, male; doi
e: *Hypena sinuosa*, female; doi
f: *Hypena occata*, male. doi

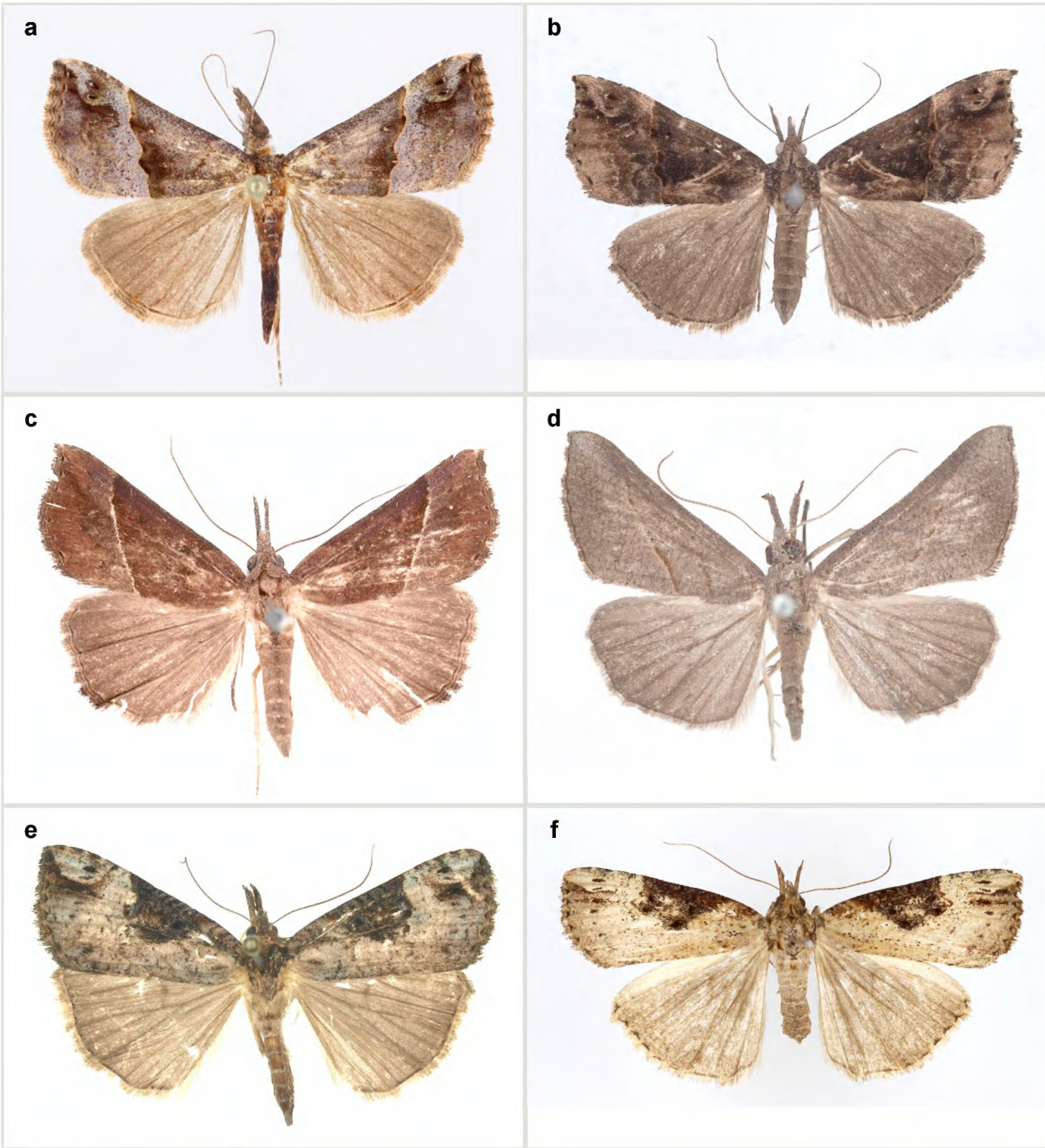

Figure 3.

Adults of *Hypena* from Korea.

a: *Hypena occata*, female; doi
b: *Hypena indicatalis*, male; doi
c: *Hypena subcyanea*, male; doi
d: *Hypena obacerralis*, male; doi
e: *Hypena tristalis*, female; doi
f: *Hypena narratalis*, female. doi

c. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Jodo-myeon,; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2008/07/28; individualCount: 2; sex: males; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 7FBE33DD-D79A-5C2F-8154-E4621458BB9F

d. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: GN; county: Namhae; locality: Idong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2014/04/08; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CEF012BF-ED94-5B0D-8AAF-A206F5160D6E

e. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Jaeun-myeon; verbatimElevation: 84; verbatimCoordinates: 34°53'23"N 126°2'43"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2020/09/08; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5D763916-13DD-5894-AC97-86339FFB9DD5

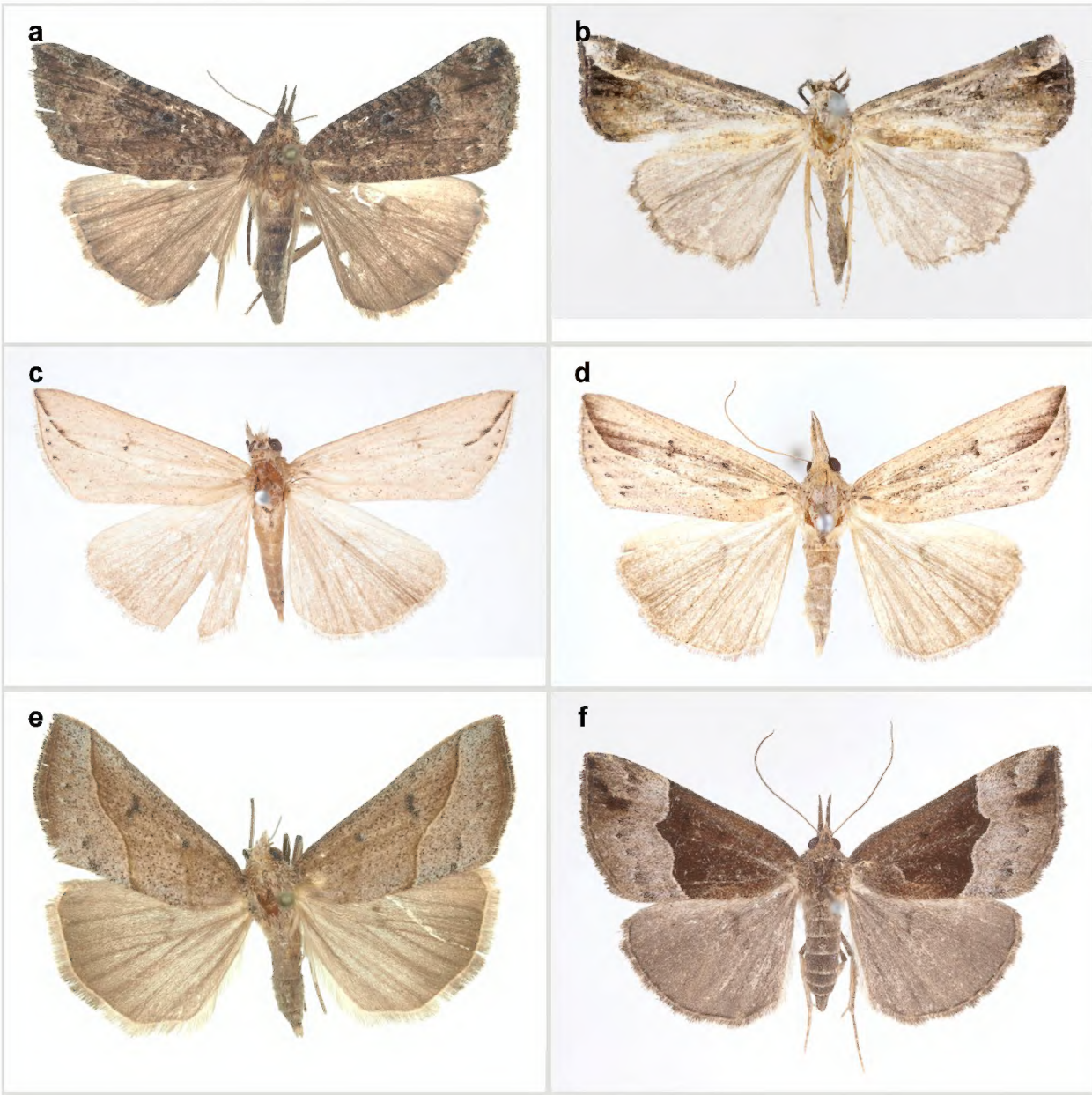

Figure 4.

Adults of *Hypena* from Korea.

a: *Hypena narratalis*, male; doi
b: *Hypena pulverulenta*, male; doi
c: *Hypena abducalis*, male; doi
d: *Hypena abducalis*, female; doi
e: *Hypena kengkalis*, male; doi
f: *Hypena stygiana*, female. doi

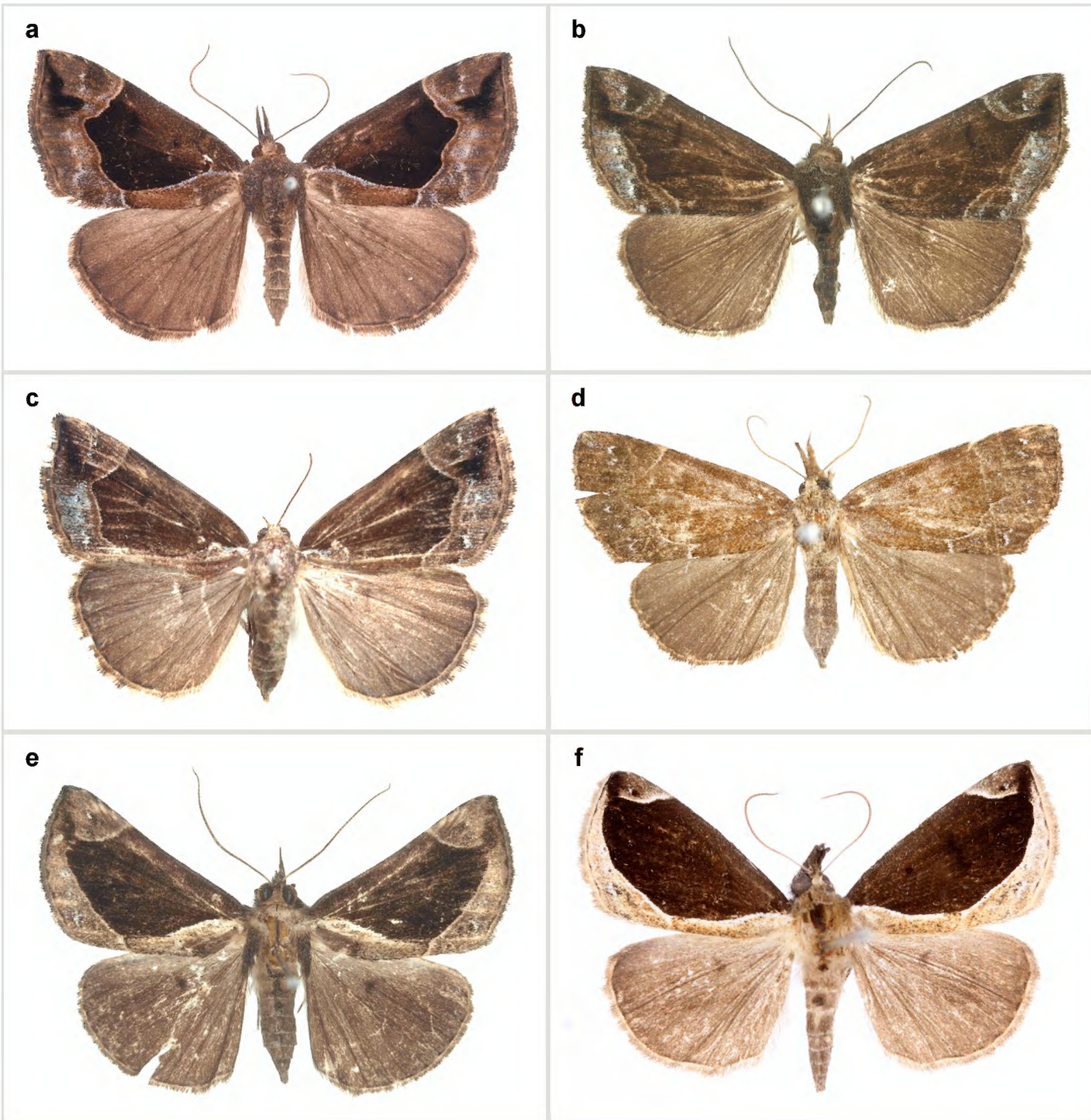

Figure 5.

Adults of *Hypena* from Korea.

a: *Hypena squalida*, female; doi
b: *Hypena nigrobasalis*, male; doi
c: *Hypena zilla*, female; doi
d: *Hypena rivuligera*, female; doi
e: *Hypena perspicua*, female; doi
f: *Hypena bicoloralis*, male. doi

f. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Gageodo-ri, Heuksan-myeon; verbatimElevation: 160; verbatimCoordinates: 34°4'30"N 125°5'54.96"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2022/07/19; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3382D856-5DBB-5D52-8B68-F90D5348FD5A

g. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Muan; locality: Cheonggye-ri, Cheonggye-myeon; verbatimElevation: 44;

verbatimCoordinates: 34°54'27"N 126°25'14"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2023/09/07; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1603AF8E-9C8C-5CE3-A78F-D87675DF9F23

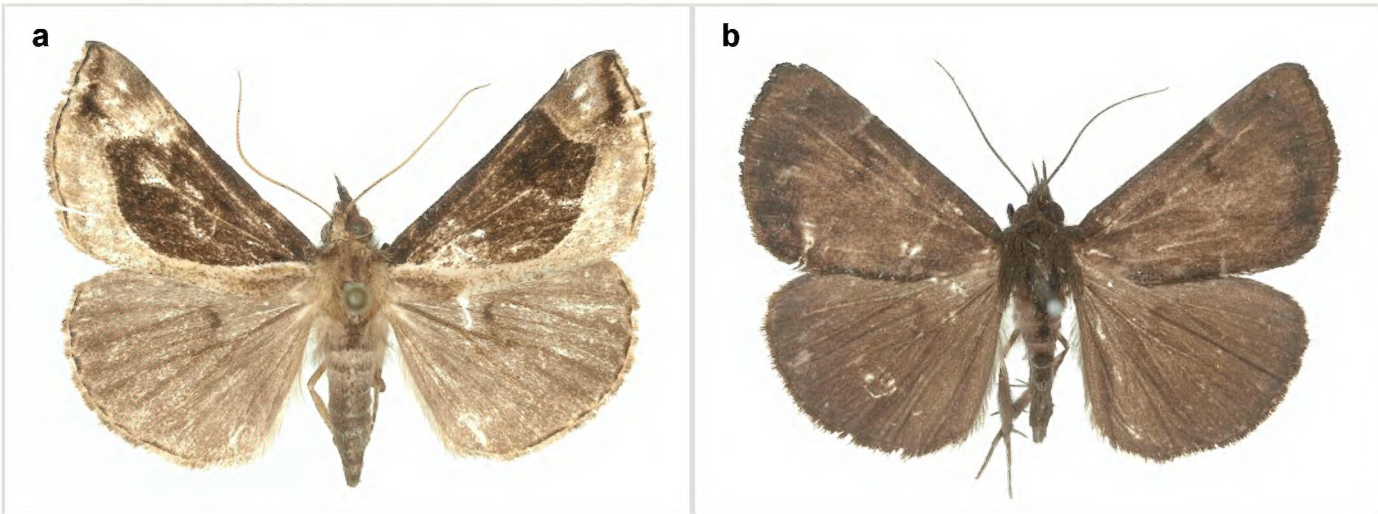

Figure 6.

Adults of *Hypena* from Korea.

a: *Hypena mandarina*, male; doi
b: *Hypena melanica*, male. doi

h. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Yeomi-ri, Jodo-myeon; verbatimElevation: 170; verbatimCoordinates: 34°19'40.33"N 126°0'13.39"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2024/08/17; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 652EF959-9963-5899-865F-7F17D927D6A1

i. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JB; county: Jeongeup; locality: Sucheong-ri, Chilbo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2013/05/04; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 55C11CFD-1E0C-5C9F-BAD4-CA6DE590CF13

j. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Yeosu; locality: Yusong-ri, Nam-myeon; verbatimElevation: 118; verbatimCoordinates: 34°32'27"N 127°43'28"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2021/07/21; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1EDA6FFB-2841-5A30-A90F-9E245891B61B

k. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Yeongam; locality: Dogap-ri, Gunseo-myeon; verbatimElevation: 121; verbatimCoordinates: 34°45'17.92"N 126°39'43.79"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2023/08/20; individualCount: 1;

sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: FAA5DA46-8A47-5C71-BA63-94D7F742FDC2

I. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Gageodo-ri, Heuksan-myeon; verbatimElevation: 110; verbatimCoordinates: 34°4'18.98"N 125°5'39.12"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2022/07/19; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A92B3682-E0AB-52D6-9E41-4E94160787CD

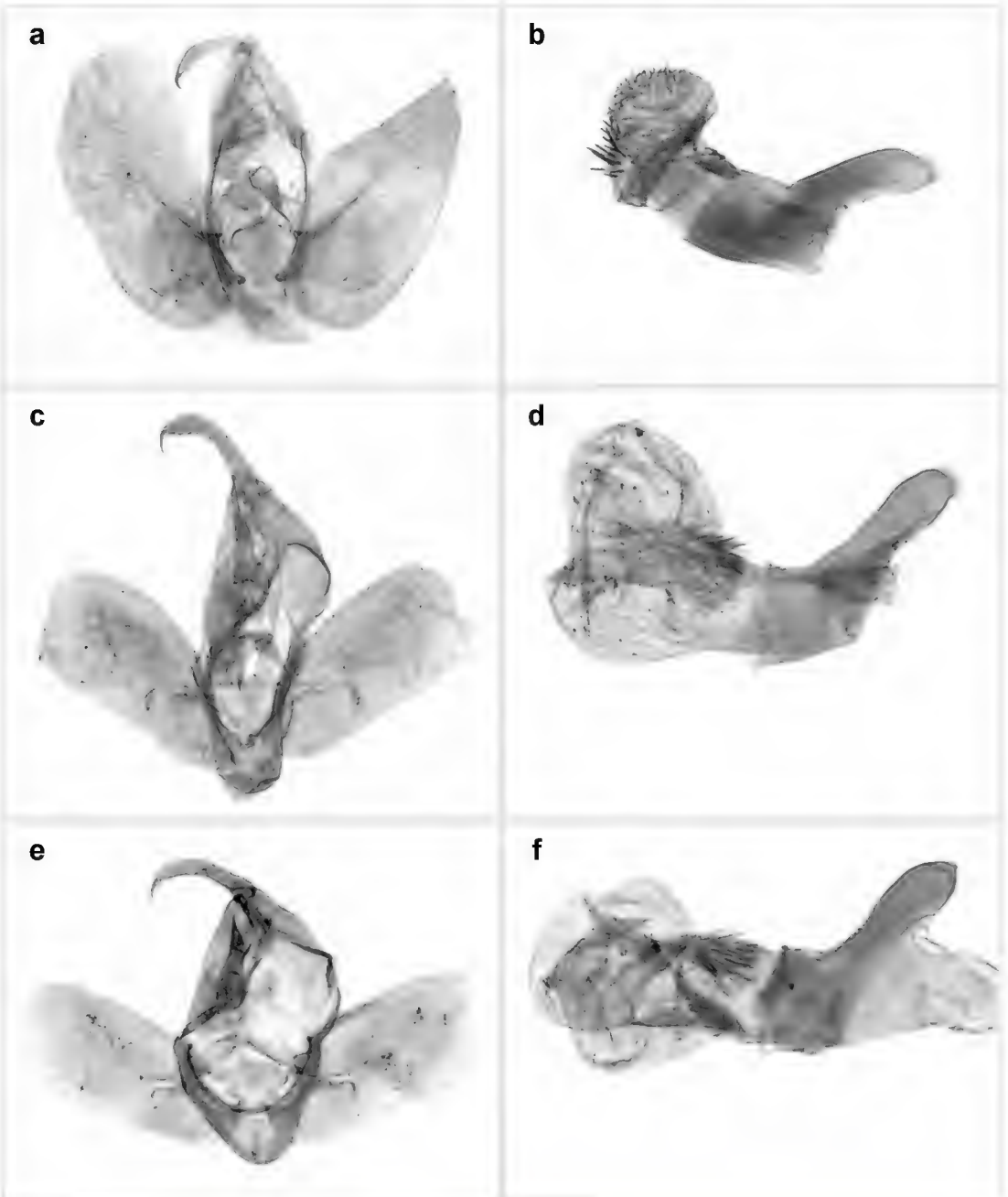

Figure 7.

Male genitalia of *Hypena* from Korea.

a: *Hypena sagitta*, male genital capsule; doi
b: *Hypena sagitta*, aedeagus; doi
c: *Hypena proboscidalis*, male genital capsule; doi
d: *Hypena proboscidalis*, aedeagus; doi
e: *Hypena tamsi*, male genital capsule; doi
f: *Hypena tamsi*, aedeagus. doi

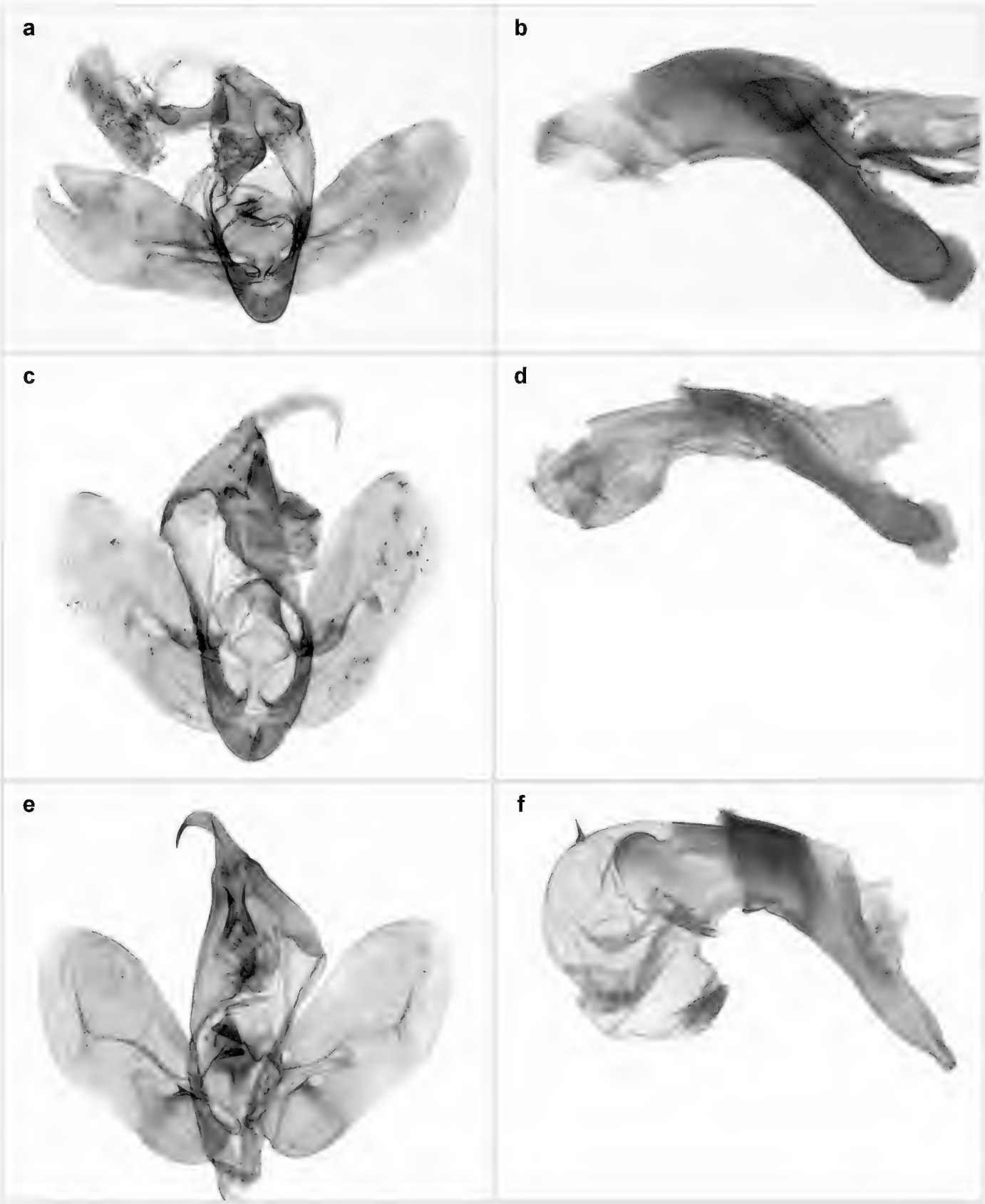

Figure 8.

Male genitalia of *Hypena* from Korea.

a: *Hypena pulverulenta*, male genital capsule; doi
b: *Hypena pulverulenta*, aedeagus; doi
c: *Hypena perspicua*, male genital capsule; doi
d: *Hypena perspicua*, aedeagus; doi
e: *Hypena mandarina*, male genital capsule; doi
f: *Hypena mandarina*, aedeagus. doi

m. scientificName: *Hypena claripennis*; country: South Korea; stateProvince: JN; county: Muan; locality: Cheonggye-ri, Cheonggye-myeon; verbatimElevation: 44; verbatimCoordinates: 34°54'27"N 126°25'14"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 2021/09/09; individualCount: 1; sex: female;

lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2E5535F2-89EF-50FD-A812-F48448B87ECF

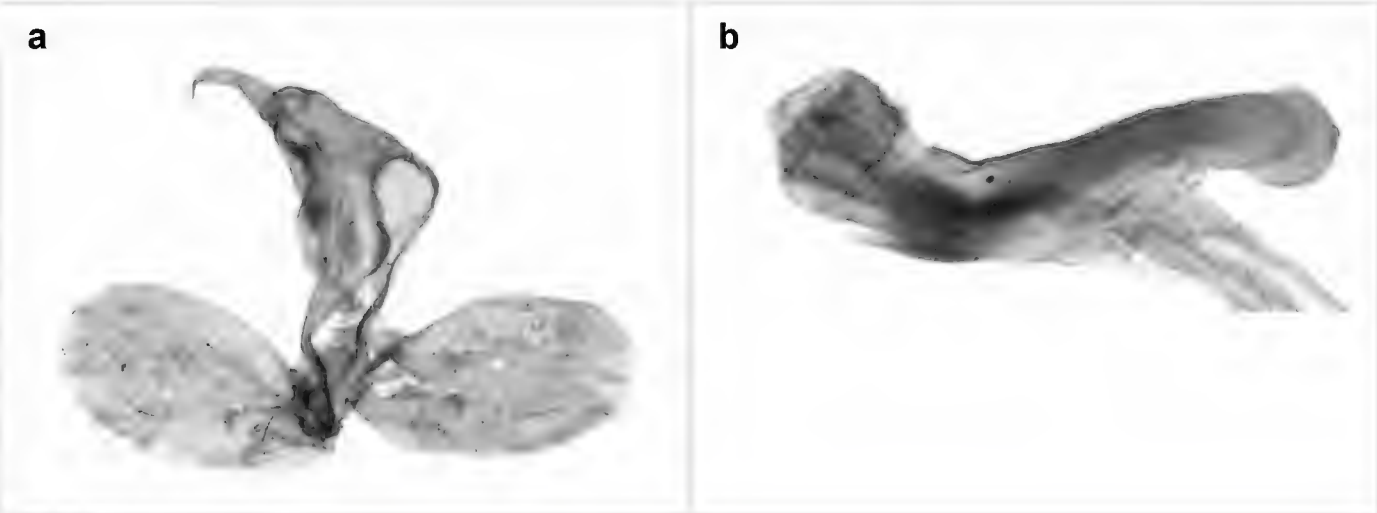

Figure 9.

Male genitalia of *Hypena obacerralis* from Korea.

a: Male genital capsule; doi

b: Aedeagus. doi

Distribution: Korea, Japan, China.

Notes: Fig. 1c, d.

Hypena amica Butler, 1878

Materials

a. scientificName: *Hypena amica*; country: South Korea; stateProvince: GW; county: Wonju; locality: Geumdae-ri, Panbu-myeon; verbatimElevation: 543; verbatimCoordinates: 37°15'9.4"N 128°1'53.52"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/20/2024; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 7F215988-785D-5DB5-AF37-4FC70BC55E9E

b. scientificName: *Hypena amica*; country: South Korea; stateProvince: GW; county: Wonju; locality: Geumdae-ri, Panbu-myeon; verbatimElevation: 543; verbatimCoordinates: 37°15'9.4"N 128°1'53.52"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/20/2024; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 590F8CFF-16D3-5924-A9BE-8B672A9641AE

c. scientificName: *Hypena amica*; country: South Korea; stateProvince: GN; county: Yeosu; locality: Samsan-myeon; verbatimElevation: 26; verbatimCoordinates: 34°3'35"N 125°27'35"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/27/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi,

Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 921E68C7-5B2D-532C-9D77-7E055B562336

d. scientificName: *Hypena amica*; country: South Korea; stateProvince: GN; county: Sancheong; locality: Chahwang-myeon; verbatimElevation: 209; verbatimCoordinates: 35°26'44"N 127°26'53"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/5/2008; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: DEF4769C-F881-5E3E-A8A7-1B96FF5E24C6

e. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Gurye; locality: Sandong-myeon; verbatimElevation: 931; verbatimCoordinates: 35°19'23"N 127°31'24.2"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/6/2024; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 53DC4BD6-57C9-5305-AD06-7ABD87DADF7C

f. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Gurye; locality: Sandong-myeon; verbatimElevation: 923; verbatimCoordinates: 35°19'22"N 127°31'23"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/28/2008; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BB3F9FF9-6333-5177-8EF2-F926D8669B92

g. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Wando; locality: Cheongsan-myeon; verbatimElevation: 64; verbatimCoordinates: 34°12'4"N 126°46'3"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/16/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E8CB97EC-6B32-58B4-9BE3-4396EBD77E37

h. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Muan; locality: Dorim-ri, Cheonggye-myeon; verbatimElevation: 52; verbatimCoordinates: 34°54'44"N 126°26'21"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/11/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CC53B1B3-CF26-584E-A391-BE1E890A7F10

i. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Wando; locality: Cheongsan-myeon; verbatimElevation: 64; verbatimCoordinates: 34°12'4"N 126°46'3"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/16/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects;

basisOfRecord: PreservedSpecimen; occurrenceID: C5331846-3A62-540C-9940-69731476832E

j. scientificName: *Hypena amica*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Haean-dong; verbatimElevation: 954; verbatimCoordinates: 33°23'31.6"N 126°29'13"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/6/2023; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 93C18E28-0AD7-50E4-89A3-30436041CE47

k. scientificName: *Hypena amica*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Mt. Halla; verbatimElevation: 615; verbatimCoordinates: 33°22'N 126°37'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/28/2006; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5A165041-A6DD-5A92-A704-B11CE070D2D9

l. scientificName: *Hypena amica*; country: South Korea; stateProvince: GN; county: Namhae; locality: Sangju-ri, Sangju-myeon; verbatimElevation: 559; verbatimCoordinates: 34°45'4.7"N 127°58'58.3"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/18/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A330076F-BB24-5C76-B35B-A0A145F440F5

m. scientificName: *Hypena amica*; country: South Korea; stateProvince: GN; county: Hadong; locality: Hwagae-myeon; verbatimElevation: 686; verbatimCoordinates: 35°18'20.8"N 127°38'10.2"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/8/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: B272EF35-6E99-50EB-9D76-A8E3E460DDFA

n. scientificName: *Hypena amica*; country: South Korea; stateProvince: JB; county: Namwon; locality: Sannae-myeon; verbatimElevation: 515; verbatimCoordinates: 35°22'33.1"N 127°34'57.9"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/12/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: D22D06FF-3EF8-51CE-ADCE-9B6B99ACCD85

o. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Gurye; locality: Toji-myeon; verbatimElevation: 1385; verbatimCoordinates: 35°18'16.2"N 127°33'43.6"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/12/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 673FA157-D9D7-5DF8-BEF0-92DD07D20911

p. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Gurye; locality: Sandong-myeon; verbatimElevation: 1504; verbatimCoordinates: 35°17'37.8"N 127°31'58.5"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/12/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C4883615-8BC4-5587-B106-E71D958400C4

q. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Goheung; locality: Sinpyeong-ri, Geumsan-myeon; verbatimElevation: 522.7; verbatimCoordinates: 34°27'40.7"N 127°10'41"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/12/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5384DDCD-E538-57B7-B4A5-F9B09EBE4963

r. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Wando; locality: Cheongsan-myeon; verbatimElevation: 64; verbatimCoordinates: 34°12'4"N 126°46'3"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/16/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2689381B-9FF0-5494-8F7A-5540673EDAB4

s. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Yeosu; locality: Yusong-ri, Nam-myeon; verbatimElevation: 118; verbatimCoordinates: 34°32'27"N 127°43'28"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/21/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5ABC0515-EAB0-53D9-892D-CF50069713F4

t. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Yeosu; locality: Samsan-myeon; verbatimElevation: 3; verbatimCoordinates: 34°3'36"N 127°23'19"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/27/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6C1E733A-F269-5A5B-BD2F-BBE351AF036F

u. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Yeosu; locality: Samsan-myeon; verbatimElevation: 26; verbatimCoordinates: 34°3'35"N 125°27'35"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/27/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BED312A1-EB2B-5FAE-B77E-955F3606697B

v. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Yeusu; locality: Yusong-ri, Nam-myeon; verbatimCoordinates: 34.53575000'N 127.70860000'E;

samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/2/2017; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CD59B5FE-FF8C-5BB5-8E5E-7A700357E46B

w. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Shinan; locality: Iheugam-ri, Imja-myeon; verbatimElevation: 91; verbatimCoordinates: 35°4'47"N 126°5'24"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/14/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 11C9955C-888A-5EFE-8CF0-C5162D54068B

x. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Jindo; locality: Jodo-myeon; verbatimElevation: 58; verbatimCoordinates: 34°14'17"N 125°54'27"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/18/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 0DD67063-E074-5EEA-9EE7-59B0DAFDD61F

y. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Muan; locality: Cheonggye-ri, Cheonggye-myeon; verbatimElevation: 44; verbatimCoordinates: 34°54'27"N 126°25'14"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/3/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C744BB7B-6DC1-5A92-90E3-748B3F393005

z. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Shinan; locality: Gageodo-ri, Heuksan-myeon; verbatimElevation: 110; verbatimCoordinates: 34°4'18.98"N 125°5'39.12"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/19/2022; individualCount: 5; sex: males; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5C83165D-E92B-5C7A-A562-057692A625BA

aa. scientificName: *Hypena amica*; country: South Korea; stateProvince: JN; county: Shinan; locality: Gageodo-ri, Heuksan-myeon; verbatimElevation: 110; verbatimCoordinates: 34°4'18.98"N 125°5'39.12"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/19/2022; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi.; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 8BCC3FCE-EA2A-54DC-B789-64BE8AC1C56F

Distribution: Korea, Japan, Taiwan.

Notes: Fig. 1e.

Hypena trigonalis Guenée, 1854

Materials

a. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: GB; county: Gunwi; locality: Nakjeon-ri, Goro-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/10/2011; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4A367D37-059D-53A8-8E0E-BCC25054FF6D

b. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Gageodo-ri, Heuksan-myeon; verbatimElevation: 110; verbatimCoordinates: 34°4'18.98"N 125°5'39.12"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/19/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 87D10D4E-294E-5C5E-A07B-40AE4B088A35

c. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Nohyeong-dong; verbatimElevation: 673; verbatimCoordinates: 33°24'36.1"N 126°29'43.3"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/6/2024; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1057DB80-F130-5E86-91DD-EEF938991E1B

d. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Jodo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/28/2008; individualCount: 2; sex: females; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1A613CA0-1DC7-585A-82CE-BAB931A29428

e. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Shinan; locality: Sugok-ri, Amtae-myeon; verbatimElevation: 170; verbatimCoordinates: 34°50'4"N 126°4'42"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/24/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C7C13B1B-3C9F-56EC-AEF9-69106BE2BAA4

f. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Muan; locality: Gangjeong-ri, Cheonggye-myeon; verbatimElevation: 68; verbatimCoordinates: 34°56'30"N 126°23'50"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/3/2024; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9220C91B-F9E8-5B55-8CC4-827DFEF9E341

g. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Jodo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/18/2008; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A374C57D-66BB-5729-BAC6-608F51C52AD6

h. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Yeomi-ri, Jodo-myeon; verbatimElevation: 2; verbatimCoordinates: 34°20'17.52"N 125°59'48.95"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/14/2022; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 8A986E3F-27A3-59D6-A93E-1A07B335E0A4

i. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Namjeju-gun; locality: Namwon-eup; verbatimElevation: 636; verbatimCoordinates: 33°22'11"N 126°37'32"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/8/2017; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5BAF7B90-2CC8-52BD-8CFD-D23EA915B664

j. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Hwasun-ro, Andeok-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/28/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: F2DEA12F-A16D-5BCE-85D5-61707E0168A7

k. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Hawon-dong,; verbatimElevation: 963; verbatimCoordinates: 33°19'57.6"N 126°27'52.6"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/6/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4E98395F-9959-5A26-8C2F-3936185519F4

l. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Hawon-dong; verbatimElevation: 1109; verbatimCoordinates: 33°21'32.1"N 126°27'44.4"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/6/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6B8CCAD5-B0F7-5496-86E3-15A00721B50F

m. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Harye-ri, Namwon-eup; verbatimElevation: 278; verbatimCoordinates: 33°18'57"N 126°37'9.9"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/5/2023; individualCount: 1; sex: female; lifeStage: adult;

recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3AFD9369-22CF-5387-8202-B332DB299EE3

n. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Harye-ri, Namwon-eup; verbatimElevation: 278; verbatimCoordinates: 33°18'57"N 126°37'9.9"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/6/2024; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 8BE35309-E434-50B0-873C-5E40CCD3BA94

o. scientificName: *Hypena trigonalis*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Haean-dong; verbatimElevation: 954; verbatimCoordinates: 33°23'31.6"N 126°29'13"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/6/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5F983800-32D3-545E-96AF-9A90909EA48E

Distribution: Korea, Taiwan, China (Hainan), India.

Notes: Fig. 1f.

Hypena proboscidalis (Linnaeus, 1758)

Materials

a. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: GW; county: Yanggu; locality: Dumu-ri, Guktojeongjungang-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/21/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C3BEF8E3-EC1F-5BA4-8A27-99A9D6C0A0F3

b. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt. Jungwang, Daehwa-myeon; verbatimElevation: 1200; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/11/2014; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4934AA99-97CC-57CF-9479-B8E0430A800F

c. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt. Jungwang, Daehwa-myeon; verbatimElevation: 1200; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/10/2014; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 99C55547-7392-59A9-A37F-DAB6F529FFB4

d. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: CB; county: Goesan; locality: Hwayang-ri, Cheongcheon-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/24/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E5ABE1A2-A9D1-5BD5-AB18-7F88C8AA485D

e. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt.,Jiri; verbatimElevation: 1350; verbatimCoordinates: 35°17'N 127°33'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/5/2005; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 822B4B6A-113F-550D-8B10-A3BBB72E857C

f. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: JN; county: Sinan; locality: Sugok-ri, Amtae-myeon; verbatimElevation: 120; verbatimCoordinates: 34°50'19"N 126°4'55"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/20/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 54C0EE5B-8923-571D-A8FB-13EF53CC98BE

g. scientificName: *Hypena proboscidalis*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Mt. Halla, Aewol-eup; verbatimElevation: 1694; verbatimCoordinates: 33°21'44"N 126°31'10"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/4/2019; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4FDC2838-3043-5D11-B94E-0DE9DD37E8C7

Distribution: Korea, Japan, Russia, Taiwan, China (South), Nepal, Bangladesh, India, Europe.

Notes: DNA barcoding. *Hypena proboscidalis* (GenBank accession No. PV274479) showed the highest mean genetic distance of 10.25% from *H. pulverulenta*, while it exhibited the lowest mean genetic distance of 0.15% from *H. tamsi* (Figs 2a, 7c, d, 10).

Hypena tamsi Filipjev, 1927

Material

a. scientificName: *Hypena tamsi*; country: South Korea; stateProvince: JB; county: Sunchang; locality: Jiseon-ri, Bohheung-myon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/5/2013; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 0C4858A0-A84B-5673-8B99-F9DD9691FB77

Figure 10. doi

Female genitalia of *Hypena proboscidalis* from Korea.

Diagnosis: Wingspan 35 mm. Antennae filiform with cilia; vertex anFd frons covered with long greyish-brown scales, distal tip ochreous; labial palpi long, covered with greyish-brown scales, second segment straight, more than three times longer than the third segment, third segment with ochreous distal end. Thorax greyish-brown; tegula consisting of long scales and hair-like scales. Forewing greyish-brown with numerous short dark brownish lines; antemedial line dark brown, undulating; postmedial line distinct, dark brownish, slightly curved at costal 2/3; subterminal line weakly undulating. Hindwing paler than forewing, greyish-brown. Abdomen greyish-brown. **Male genitalia**. Uncus long, weakly hooked, apex sharply pointed. Tegumen hood-shaped; tuba analis long; juxta broad, thick hexagon-shape on its side; saccus shallow, semi-rounded. Valva simple, stout, weakly sclerotised; costal margin almost flat, outer 1/4 weakly swollen; sacculus ventral margin medially weakly invaginated; basally a slender division of clavus with a minute process. Aedeagus rod-shaped, anteriorly with dense spicules; vesica large sac-shaped, cornuti a mass of large spines.

Distribution: Korea, Russian Far East.

Notes: This is the first record for the Korean fauna. The DNA barcode of *Hypena tamsi* was first registered in this study (GenBank accession No. PV274484) and the p-distance with *H. pulverulenta* was 10.25%, while the lowest genetic distance of 0.15% was observed with *H. proboscidalis* (Figs 2b, 7e, f).

Hypena strigatus (Fabricius, 1798)

Material

a. scientificName: *Hypena strigatus*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Gangjeong-dong; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/21/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9736F49B-DBB2-526C-A9BF-DD1D4CC7735A

Distribution: Korea, Japan, India.

Notes: Fig. 2c.

Hypena furva Wileman, 1911

Distribution: Korea, Japan, Taiwan.

Notes: Leech (1889) was the first to document this species in Korea. Although Kononenko et al. (1998) did not examine this species, Kononenko and Han (2007) provided an illustration of the female genitalia of a specimen collected from Okcheon, Chungbuk.

Hypena conspersalis Staudinger, 1888

Material

a. scientificName: *Hypena conspersalis*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt. Gyebang; verbatimElevation: 801; verbatimCoordinates: 37°41'59.69"N 128°28'47.6“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/13/2010; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E8290304-4778-55AB-8C8D-4948DC6C3DE7

Distribution: Korea, China (Jilin), Russian Far East.

Notes: Bryk (1949) was the first to document this species, with Park et al. (2001) later recording it in North Korea. In this study, we identified a male specimen from Gangwon Province, representing a new addition to the South Korean fauna (Fig. 2d).

Hypena sinuosa Wileman, 1911

Materials

a. scientificName: *Hypena sinuosa*; country: South Korea; stateProvince: GN; county: Geoje; locality: Gucheon-ri, Dongbu-myon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/25/2012; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: DE91B4DE-E030-5ABA-B01A-3A822C019FFB

b. scientificName: *Hypena sinuosa*; country: South Korea; stateProvince: JJ; county: Mt. Halla; verbatimElevation: 525; verbatimCoordinates: 33°19′56.7″ 126°36′25.7″; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/4/2024; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CBADEC20-3456-5A42-AE5B-36A612E04572

c. scientificName: *Hypena sinuosa*; country: South Korea; stateProvince: JJ; county: Mt. Halla; verbatimElevation: 525; verbatimCoordinates: 33°19′56.7″ 126°36′25.7″; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 11/9/2024; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 915DFE8C-97F2-5232-8D2E-94372048EB54

Distribution: Korea, Japan, Taiwan.

Notes: Fig. 2e.

Hypena occata Moore, 1882

Materials

a. scientificName: *Hypena occata*; country: South Korea; stateProvince: GN; county: Tongyeong; locality: Sanyang-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/8/2014; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 266524F2-CE7F-5ED5-B70C-C9CA676AA39C

b. scientificName: *Hypena occata*; country: South Korea; stateProvince: GN; county: Tongyeong; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/24/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: B15117E1-7409-58E1-8476-EF2ADB330709

c. scientificName: *Hypena occata*; country: South Korea; stateProvince: GN; county: Geoje; locality: Hakdong-ri, Dongbu-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/9/2014; individualCount: 1; sex: female;

lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A7943CBA-74B8-56BF-9FB3-DF15CCA00E35

d. scientificName: *Hypena occata*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Gujwa-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/3/2000; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BD337962-93CC-55A5-9643-14F5D28EA9D7

e. scientificName: *Hypena occata*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Gujwa-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/3/2000; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BD2B6CA7-DAB3-5B04-9C4D-013E56FD819D

f. scientificName: *Hypena occata*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Jeoji-ri, Hangyeong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 3/20/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 76D67263-0CB4-57EA-85E1-340EC3207B23

g. scientificName: *Hypena occata*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Sagye-ri, Andeok-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/23/2017; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E2C0F95C-EFC3-5F7C-A75A-19214A01E78C

h. scientificName: *Hypena occata*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Jungmun-dong; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 3/28/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 14DDB563-92CF-52E6-BD14-4504980B3033

Distribution: Korea, Japan, Taiwan.

Notes: Leech (1889) recorded this species from Wonsan (Gensan), North Korea. Based on the specimens examined in this study, the first record of the species is ambiguous (Figs 2f, 3a).

Hypena indicatalis Walker, 1859

Material

a. scientificName: *Hypena indicatalis*; country: South Korea; stateProvince: JN; county: Jindo; locality: Sinjeon-ri, Jodo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/10/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: AF4B9C97-2FD8-551C-AF55-64A8B4FD5CC3

Distribution: Korea, Japan, Taiwan, India.

Notes: Leech (1889) recorded this species from Wonsan (Gensan), North Korea. Based on the specimens examined in this study, the first record of the species is ambiguous (Fig. 3b).

Hypena subcyanea Butler, 1880

Materials

a. scientificName: *Hypena subcyanea*; country: South Korea; stateProvince: GN; county: Sacheon; locality: Seojeong-ri, Gonyang-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/3/2023; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1F662305-8128-5E13-BC9D-B3A7572E8E35

b. scientificName: *Hypena subcyanea*; country: South Korea; stateProvince: GN; county: Geoje; locality: Gucheon-ri, Dongbu-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/25/2012; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 00F32366-3725-5BF1-927A-ABD1ABEB7D63

c. scientificName: *Hypena subcyanea*; country: South Korea; stateProvince: JN; county: Yeosu; locality: Yulchon-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/28/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 868366BC-BC93-527C-ACE7-53A4094C6E29

Distribution: Korea, Japan, Taiwan.

Notes: Leech (1889) and Leech (1900) recorded this species from Wonsan (Gensan), North Korea. Based on the specimens examined in this study, the first record of the species is ambiguous (Fig. 3c).

Hypena obacerralis Walker, 1859

- ZooBank urn:lsid:zoobank.org:act:A4417862-62F2-433B-BCC9-E677576FF1C9

Nomenclature:

Hypena longipalpis Guenée, 1862 - Guenée (1862) | *Hypena ferriscitalis* Walker, 1866 -Walker (1866) | *Hypena comes* Butler, 1882 - Butler (1882) | *Hypena sordida* Rothschild, 1921 - Rothschild (1921).

Diagnosis: Wingspan 24 mm. Antennae filiform; vertex and frons narrow, greyish-brown, covered with long erected scales; labial palpi dark brown, covered with erected scales on dorsal and ventral surfaces, second segment two times longer than the third segment. Thorax greyish-brown; tegula consisting of long scales and hair-like scales. Forewing ground colour greyish-brown; antemedial and postmedial lines reddish-brown, parallel, strongly oblique. Hindwing greyish-brown, without medial lines; veins distinct with dark greyish-brown. **Male genitalia.** Uncus long, tapering, apex strongly sclerotised, pointed. Tegumen hood-shaped; tuba analis long; saccus short, semi-rounded. Valva simple, weakly sclerotised, medially expanded; costa basally strongly sclerotised, dorsal margin medially strongly swollen; sacculus dorsally with a strongly swollen medial process and a nipple-shaped distal process, ventral margin weakly swollen; basally a relatively thin division of clavus. Aedeagus long, rod-shaped, anteriorly with dense spicules; vesica large, tubular, cornuti a patch of spines.

Distribution: Korea, Middle East and South Asia (India, Sri Lanka, Malaysia), Australia, Africa.

Notes: This is the first record for the Korean fauna. The DNA barcode of *Hypena obacerralis* was first registered in this study (GenBank accession No. PV274486) and the p-distance with *H. zilla* was 9.32%, while the lowest genetic distance of 7.39% was observed with *H. obesalis* (Figs 3d, 9).

Hypena tristalis Lederer, 1853

Materials

a. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: GW; county: Yanggu; locality: Dumu-ri, Guktojeongjungang-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/21/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 27B1E79B-B457-5EC3-81C3-72161220504C

b. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: GW; county: Inje; locality: Mt. Seorak, Buk-myeon; verbatimElevation: 1700; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/1/2013; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025;

language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3BDECC4D-6C05-502B-B927-43BDF0E9BA5D

c. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: GW; county: Inje; locality: Bangdong-ri, Girin-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/12/2013; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: B9FF6AB4-A800-5FA3-9898-40E53E2DE10A

d. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt. Jungwang, Daehwa-myeon; verbatimElevation: 1200; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/17/2013; individualCount: 2; sex: females; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 38764FCF-B3C1-5768-AE41-09D25E9CE81B

e. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri, Toji-myeon; verbatimElevation: 1318; verbatimCoordinates: 35°18'12"N 127°33'34“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/20/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2E7595B8-A428-58D2-9966-2EB9957F3598

f. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri,Sandong-myeon; verbatimElevation: 1504; verbatimCoordinates: 35°17'37.8"N 127°31'58.5“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/16/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 71D46044-009B-58F5-8EF9-7B992A2057BE

g. scientificName: *Hypena tristalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri, Sandong-myeon; verbatimElevation: 1074; verbatimCoordinates: 35°18'21"N 127°30'45“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/14/2012; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BB437A0C-FEFB-51DD-8FA8-436413F8D99F

Distribution: Korea, Japan, China, Russian Far East.

Notes: *Hypena tristalis* (GenBank accession No. JN273650, JN273651) showed the highest mean genetic distance of 8.71% from *H. trigonalis*, while it exhibited the lowest mean genetic distance of 4.13% from *H. obesalis* (Fig. 3e).

Hypena narratalis Walker, 1859

Materials

a. scientificName: *Hypena narratalis*; country: South Korea; stateProvince: GW; county: Pyungchang; locality: Mt. Jungangsan,Daewha-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/13/2012; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A3109A78-BC30-5F8E-B9B5-63E15ED8DCD1

b. scientificName: *Hypena narratalis*; country: South Korea; stateProvince: GW; county: Pyungchang; locality: Mt. Jungangsan,Daewha-myeon; verbatimElevation: 1200; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/14/2015; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: ED5F831C-E275-58AA-9C75-08EEFDD2BB3A

c. scientificName: *Hypena narratalis*; country: South Korea; stateProvince: GW; county: Inje; locality: Bangtong-ri, Girin-myon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/8/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CC27B8DD-C138-5CD2-B1FC-2E3DEE539D1F

d. scientificName: *Hypena narratalis*; country: South Korea; stateProvince: CB; county: Danyang; locality: Mt. Soback; verbatimElevation: 530; verbatimCoordinates: 36°59'N 128°28'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/21/2005; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: D42BF003-FFFC-5458-8FD6-B16996D8FF46

Distribution: Korea, Japan, Taiwan, India (North).

Notes: *Hypena narratalis* (GenBank accession No. PV274487) showed the highest mean genetic distance of 8.71% from *H. trigonalis*, while it exhibited the lowest mean genetic distance of 4.29% from *H. obesalis* (Figs 3f, 4a).

Hypena pulverulenta Wileman, 1911

Material

a. scientificName: *Hypena pulverulenta*; country: South Korea; stateProvince: Sejong; county: Sejong; locality: Geumnam-myeon; verbatimCoordinates: 36°27'33"N 127°17'53E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/5/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects;

basisOfRecord: PreservedSpecimen; occurrenceID: C81FAE0B-B02A-5846-A835-07AD4E5A9A15

Diagnosis: Wingspan 24 mm. Antenna filiform covered with yellowish-brown scales; vertex and frons covered with yellowish-brown erected scales; labial palpi long, second segment yellowish-brown, six times longer than the third segment, third segment covered with blackish scales. Thorax yellowish-brown; tegula consisting of long scales and hair-like scales. Forewing ground colour dark brownish, dorsally ochreous with yellowish-brown; central fascia large triangular; discal dot small black; subterminal line costally blackish; apex distinct with a whitish oblique line. Hindwing pale yellowish-brown. Abdomen yellowish-brown. **Male genitalia.** Uncus long, rod-shaped, apex strongly sclerotised, sharply hooked, pointed. Tegumen hood-shaped; tuba analis long; juxta broad, thick diamond-shape on its side; saccus long, semi-rounded. Valva simple, weakly sclerotised, medially expanded; costal margin medially swollen; sacculus ventral margin medially weakly invaginated; basally a relatively thick and long division of clavus with a minute process. Aedeagus rod-shaped, anteriorly simple; vesica tubular, cornuti a row of spines.

Distribution: Korea, Japan.

Notes: This is the first record for the Korean fauna. The DNA barcode of *Hypena pulverulenta* was first recorded in this study (GenBank accession No. PV274491). The p-distance with *H. proboscidalis* and *H. tamsi* was 10.25%, while the lowest genetic distance (6.63%) was recorded for *H. obesalis* (Figs 4b, 8a, b).

Hypena abducalis (Walker, 1859)

Materials

a. scientificName: *Hypena abducalis*; country: South Korea; stateProvince: Incheon; county: Incheon; locality: Muui-dong, Jung-gu; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/31/2022; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CBE95168-27C6-5B1D-ABFA-4FD90E56F7B2

b. scientificName: *Hypena abducalis*; country: South Korea; stateProvince: GB; county: Gunwi; locality: Nakjeon-ri, Goro-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/10/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E42B65BC-57C1-5AF5-B330-05B76B427352

c. scientificName: *Hypena abducalis*; country: South Korea; stateProvince: JN; county: Muan; locality: Gangjeong-ri, Cheonggye-myeon; verbatimElevation: 68; verbatimCoordinates: 34°56'30"N 126°23'50“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/3/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University;

identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 0B991DCC-83C9-56DC-936F-8793284B2451

d. scientificName: *Hypena abducalis*; country: South Korea; stateProvince: JJ; county: Jeju; locality: near Imperial Hotel; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/24/2002; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 84BC9469-A3DA-56DD-B4E0-48AA7A910AD1

Distribution: Korea, Japan, China (South), India.

Notes: Fig. 4c, d.

Hypena kengkalis Bremer, 1864

Materials

a. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: GW; county: Inje; locality: Wondae-ri, Inje-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/20/2023; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 16E6DF78-4786-5F89-808B-C93FAAC7762B

b. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt. Nambyeong, Gogil-ri; verbatimElevation: 1000; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/19/2016; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 8607FF0E-F1F4-5641-A51D-5C8AF00D2292

c. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: GW; county: Wonju; locality: Bangye-ri, Munmak-eup; verbatimCoordinates: 37°19'40.64"N 127°46'4.61“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/18/2010; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6A9206F6-7EF9-5734-A749-A5A6B0688B6B

d. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: Seoul; county: Hoegi-dong; locality: Kyung Hee Univ.; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 10/17/1992; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E31EBCAF-9C08-592D-AC2A-ADABB7A3D0B5

e. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: GB; county: Yeongdeok; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours;

eventDate: 9/3/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5F9FF90F-7411-5A74-BF7B-2BCA8BDA8E1D

f. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: GN; county: Sancheong; locality: Chahwang-myeon; verbatimElevation: 358; verbatimCoordinates: 35°26'36"N 127°56'20"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/5/2008; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 7C37829A-C71D-5A67-8674-F3BBAFC251B7

g. scientificName: *Hypena kengkalis*; country: South Korea; stateProvince: JN; county: Muan; locality: Mt. Seungdal; verbatimCoordinates: 34°54'N 126°27'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 11/9/2004; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E9A39D8E-1F9C-5651-9BA4-9ADAE9B2770E

Distribution: Korea, Japan, China, Russian Far East.

Notes: Fig. 4e.

Hypena albopunctalis (Leech, 1889)

Distribution: Korea, China, Taiwan.

Notes: Leech (1889) first recorded this species in Gensan, North Korea. In Japan, it is known to feed on *Oreocnide frutescens* (Thunb.) Miq. (Urticaceae), a plant species that is exclusively found in Biyang-do, Jeju Island, Korea. Kononenko and Han (2007) highlighted the ambiguity surrounding records of this species in Korea. Considering the distribution of its food plant and the observations made by Kononenko and Han (2007), the presence of this species in Korea remains uncertain.

Hypena stygiana Butler, 1878

Materials

a. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Yanggu; locality: Wondang-ri, Dong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/22/2008; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: B1E5EF3A-9CC6-5796-9F80-933FB67F8045

b. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Inje; locality: Yongdae-ri, Buk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort:

6 trapping hours; eventDate: 7/18/2023; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BC4A7954-7BE8-5907-A84F-3EC25CF93A17

c. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Yangyang; locality: nearJochimnyeong tunnel; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/13/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 612B6166-B097-55B8-B6DF-46C7340C9111

d. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Mt.Jungwang,Daehwa-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/1/2011; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: BD9CC0E3-B34B-5E5C-8EC6-EC74EAB6E475

e. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Jeongseon; locality: Yeoryang-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/11/2018; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: D3144C15-98C0-5A1F-8FD0-A2A0C368A9AB

f. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Yeongwol; locality: Mt. Hamback; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/5/2012; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3F68EA41-2F14-540D-99C5-7B181279E0A0

g. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Yeongwol; locality: Mt. Hamback; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/5/2012; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6C6D4826-20F3-502F-9E12-2AC2241786AB

h. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GW; county: Yeongwol; locality: Ssangyong-ri, Hanbando-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/27/2022; individualCount: 2; sex: males; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: FEB1145D-9A85-5D1A-A56E-E3DC1264304F

i. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GG; county: Namyangju; locality: Mt. Chungnyeong, Sudong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/23/2016; individualCount: 1;

sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 42F00D63-E192-544E-B2A3-2A3BC5913BB1

j. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: CB; county: Jecheon; locality: Jeongok-ri, Susan-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/8/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 10A8B81C-A007-529E-8F79-209AB3E94EBE

k. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: GN; county: Hamyang; locality: Samjeong-ri, Macheon-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/2/2015; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 94BD85C0-4964-5BA8-B4C3-A4996EDFD1EE

l. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri,Toji-myeon; verbatimElevation: 1362; verbatimCoordinates: 35°18'2"N 127°33'10.5“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/19/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6EAFC65A-EC2F-5C66-8852-C10C01444214

m. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri,Toji-myeon; verbatimElevation: 1362; verbatimCoordinates: 35°18'2"N 127°33'10.5“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/19/2020; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 482594AF-6405-5E8D-8E59-E92705465673

n. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt.Jiri, Toji-myeon; verbatimElevation: 1371; verbatimCoordinates: 35°18'01"N 127°33'09“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/11/2016; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 98289FFD-87BB-5556-9A86-DD0C374EFAC4

o. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri,Sandong-myeon; verbatimElevation: 1504; verbatimCoordinates: 35°17'37.8"N 127°31'58.5“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/9/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2BDDEE00-A786-5F1A-A211-A97F6F74E8A6

p. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Goheung; locality: Sangnam-ri, Daeseo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/17/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9FD5E0E0-C63E-50F9-9652-0D4C3D6C386D

q. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JN; county: Goheung; locality: Sangnam-ri, Daeseo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/17/2022; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: F945D0BE-FDDC-5204-A0F8-10C5B75C6A63

r. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Jeju International Univ., Hawon-dong; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/13/2015; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4AFF78B0-6B6E-5445-BE3B-D57BEBDBF835

s. scientificName: *Hypena stygiana*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Jeju International Univ., Hawon-dong; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/13/2015; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: AE76B653-218A-5D00-A11C-A7BCA6AF0B57

Distribution: Korea, Japan, Russian Far East.

Notes: *Hypena stygiana* (GenBank accession No. PV274475, PV274482) showed the highest mean genetic distance of 8.52% from *H. pulverulenta*, while it exhibited the lowest mean genetic distance of 4.25% from *H. squalida* (Fig. 4f).

Hypena squalida Butler, 1879

Materials

a. scientificName: *Hypena squalida*; country: South Korea; stateProvince: GW; county: Pyeongchang; locality: Singi-ri, Jinbu-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/5/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2B2E0B7F-A418-5789-B8EF-996246FD8D5D

b. scientificName: *Hypena squalida*; country: South Korea; stateProvince: GW; county: Taebaek; locality: near RailwayStation Chugeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/7/2017; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National

University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C1B38E33-35FD-599F-8207-834B1190020F

c. scientificName: *Hypena squalida*; country: South Korea; stateProvince: GB; county: Ulleung; locality: Na-ri, Buk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/23/1998; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2D2201F7-853E-5D64-8AB4-7B230E4D2904

d. scientificName: *Hypena squalida*; country: South Korea; stateProvince: GB; county: Ulleung; locality: Na-ri, Buk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/23/1998; individualCount: 4; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: F2A1EB4A-7BA6-5912-9419-A72B944A9B93

Distribution: Korea, Japan, Russian Far East.

Notes: *Hypena squalida* (GenBank accession No. PV274473) showed the highest mean genetic distance of 9.06% from *H. obacerralis*, while it exhibited the lowest mean genetic distance of 4.25% from *H. stygiana* (Fig. 5a).

Hypena nigrobasalis (Herz, 1904)

Materials

a. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: GW; county: Yeongwol; locality: Mt. Saja, Suju-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/24/2011; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1E8336C5-1D49-5422-9FC9-701594F364D6

b. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: GW; county: Yeongwol; locality: Mt. Saja, Suju-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/5/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 39075E1C-1571-5896-A505-7522FEB6B387

c. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: CN; county: Gongju; locality: Mt. Gyeryong, Gyeryong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/4/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6E6306A6-AFCA-5380-920E-23389C488B59

d. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: GB; county: Sangju; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/20/2020; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 504C0ABF-A565-5AE4-B8C1-C67176BEFF39

e. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: GN; county: Geoje; locality: Gucheon-ri, Dongbu-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/25/2012; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1D6E688D-8350-5501-840C-0200EC6DB21E

f. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: GN; county: Geoje; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/19/2012; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 299A2044-9E06-5453-AA1F-10AFD0A3D7A8

g. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri, Sandong-myeon; verbatimElevation: 923; verbatimCoordinates: 35°19'22"N 127°31'23“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/22/2008; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: F292A12A-89A7-532A-8685-9F1C93EB8945

h. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri, Toji-myeon; verbatimElevation: 1371; verbatimCoordinates: 35°18'01"N 127°33'09“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/11/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9EE04DF5-5521-5983-92D9-0FFC63C02493

i. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: JN; county: Muan; locality: Dalsan-ri, Mongtan-myeon; verbatimElevation: 261; verbatimCoordinates: 34°55'00"N 126°27'18“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/29/2017; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 28DABF6F-ECF1-5E5D-85FF-2DC09E2D4606

j. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: JN; county: Muan; locality: Mt. Bopyeong, Muan-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/20/2018; individualCount: 2; sex: males; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en;

collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9917EF4D-CC7B-5214-A6A3-11587E9E273F

k. scientificName: *Hypena nigrobasalis*; country: South Korea; stateProvince: JN; county: Yeongam; locality: Mt. Wolchul,; verbatimElevation: 180; verbatimCoordinates: 34°44'N 126°41'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/25/2006; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 9C1F425B-4F54-5FC1-85E9-989DA832243E

Distribution: Korea, Japan, China (Jilin), Russia.

Notes: *Hypena nigrobasalis* (GenBank accession No. PV274476, PV274477, PV274478, PV274480) showed the highest mean genetic distance of 8.1% from *H. pulverulenta*, while it exhibited the lowest mean genetic distance of 4.64% from *H. stygiana* (Fig. 5b).

Hypena zilla (Butler, 1879)

Materials

a. scientificName: *Hypena zilla*; country: South Korea; stateProvince: GW; county: Inje; locality: Yongdae-ri, Buk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/30/2023; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 19E30EB8-6054-5A8A-9A1D-7EC90B902C39

b. scientificName: *Hypena zilla*; country: South Korea; stateProvince: GG; county: Namyangju; locality: Mt. Chungnyeong, Sudong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/23/2016; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 435C06C6-D92C-5F5B-B201-BC763DF46250

c. scientificName: *Hypena zilla*; country: South Korea; stateProvince: GG; county: Namyangju; locality: Mt. Chungnyeong, Sudong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/23/2016; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CB70C924-4E27-5264-A16F-9501EBBB0502

d. scientificName: *Hypena zilla*; country: South Korea; stateProvince: GG; county: Yongin; locality: Cheongdeok-dong, Giheung-gu; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/29/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 7B440511-3980-5AA0-8839-D2A48AFD9FDA

e. scientificName: *Hypena zilla*; country: South Korea; stateProvince: CB; county: Goesan; locality: Hwayang-ri, Cheongcheon-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/23/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 2A9B716C-050E-5BC1-8104-491EEE88A89A

f. scientificName: *Hypena zilla*; country: South Korea; stateProvince: CB; county: Jincheon; locality: Singye-ri, Iwol-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/15/2019; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: EF4CC753-1511-55B3-BB9F-27E2F7CF7458

g. scientificName: *Hypena zilla*; country: South Korea; stateProvince: GB; county: Yeongyang; locality: Suha-ri, Subi-myeon; verbatimElevation: 338; verbatimCoordinates: 36°49'44"N 129°15'53“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/29/2007; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 40F595C8-3652-5661-ACD1-206CA6B83D64

h. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JN; county: Yeongam; locality: Mt. Wolchul; verbatimElevation: 180; verbatimCoordinates: 34°44'N 126°41'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/25/2006; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3E40C821-ED14-54C5-AA82-03303E2452A9

i. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JN; county: Sinan; locality: Aphae-eup; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/15/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: AB2E6B63-DE64-5D72-9F79-21EEA1BB15DF

j. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Mt. Halla, Aewol-eup; verbatimElevation: 1694; verbatimCoordinates: 33°21'44"N 126°31'10"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/8/2018; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: DE6D1F38-F02C-5969-AC1D-8637AB1BE509

k. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Aewol-eup; verbatimElevation: 1410; verbatimCoordinates: 33°22'32.2"N 126°29'58.8"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/30/2022; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi;

dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: D2C0FF2C-63CD-5809-83FE-8B7A8EFE4819

l. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Mt. Halla, Aewol-eup; verbatimElevation: 1694; verbatimCoordinates: 33°21'44"N 126°31'10"E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/4/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 87011482-DC39-570E-9C24-C073E7E95E6D

m. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Mt. Halla, Hawon-dong; verbatimElevation: 970; verbatimCoordinates: 33°20'N 126°28'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/26/2005; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5B1006F8-4261-575F-B738-E01C94F3AB30

n. scientificName: *Hypena zilla*; country: South Korea; stateProvince: JJ; county: Jeju; locality: Mt. Halla,; verbatimElevation: 1700; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/18/2009; individualCount: 2; sex: females; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 556F8B2F-327D-5363-A7DF-14778180E67C

Distribution: Korea, Japan, China.

Notes: Fig. 5c.

Hypena rivuligera (Butler, 1881)

Materials

a. scientificName: *Hypena rivuligera*; country: South Korea; stateProvince: GG; county: Gapyeong; locality: Gugmangbong, Buk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/14/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 223C4441-84DE-55A0-B4BA-4B68562B6A7A

b. scientificName: *Hypena rivuligera*; country: South Korea; stateProvince: GB; county: Gunwi; locality: Nakjeon-ri, Goro-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/14/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: FAAE845B-509A-5C84-AA6C-FDC08B84FC4C

c. scientificName: *Hypena rivuligera*; country: South Korea; stateProvince: GN; county: Hadong; locality: Hwagae-myeon; verbatimElevation: 702; verbatimCoordinates: 35°18'21"N 127°38'11“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/21/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 6FDA4F14-6D48-5379-9706-C7F23425A199

d. scientificName: *Hypena rivuligera*; country: South Korea; stateProvince: GN; county: Sacheon; locality: Gonyang; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/8/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C5FC5806-C3B2-524C-BBF9-F22B414D9D0E

Distribution: Korea, Japan.

Notes: Fig. 5d.

Hypena perspicua Leech, 1900

Materials

a. scientificName: *Hypena perspicua*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Mt. Halla; verbatimCoordinates: 33°19'N 126°36'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/24/2004; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 93B669B0-4F26-538B-8963-B111FD230DC6

b. scientificName: *Hypena perspicua*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Seoquipo Natural Recreation Forest; verbatimCoordinates: 33°18'39"N 126°27'32“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 9/25/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: CDCF5057-7A39-52EF-9D00-C7C7F02050AB

Diagnosis: Wingspan 30 mm. Antenna filiform, brown; vertex yellowish-brown scales; frons with dark brown scales; labial palpi covered with obliquely erected dark brown scales on dorsal and ventral surfaces, second segment three times longer than the third segment, distal end of third segment yellowish. Thorax dark brown; tegula consisting of long scales and hair-like scales. Forewing ground colour pale brown; a large rhomboidal dark brown medial patch, inner line from the base to outer line bordered dorsally with yellowish-white, outer line strongly curved at 1/3 from costa where dark brown band from apex meets; subapical and subtornus dots blackish. Hindwing brown with a large blackish discal dot. Abdomen brown with dark brown

erected scales at middle of 1st to 4th terga. **Male genitalia.** Uncus long, weakly tapering, apex strongly hooked, pointed. Tegumen hood-shaped; tuba analis long; juxta broad, thick diamond-shape on its side; saccus long, semi-rounded. Valva simple, weakly sclerotised, medially expanded; costal margin medially swollen, ventrally swollen; sacculus ventral margin medially weakly invaginated; basally a relatively long division of clavus, about a half of length of valva with a nipple-shaped process. Aedeagus long, rod-shaped, anteriorly simple; vesica tubular, cornuti a row of spines and a small sclerotised plate.

Distribution: Korea, Japan, China, Taiwan, Thailand.

Notes: This is the first record for the Korean fauna. The DNA barcode of *Hypena perspicua* was first registered in this study (GenBank accession No. PV274488). The p-distance with *H. proboscidalis* and *H. tamsi* was 9.99%, while the lowest genetic distance (5.07%) was recorded for *H. nigrobasalis* (Figs 5e, 8c, d).

Hypena bicoloralis Graeser, 1889

Materials

a. scientificName: *Hypena bicoloralis*; country: South Korea; stateProvince: GW; county: Yangyang; locality: Seorim-ri, Seo-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/17/2017; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 007B04BF-575A-5B56-AE51-E0A221592352

b. scientificName: *Hypena bicoloralis*; country: South Korea; stateProvince: JB; county: Jeongeup; locality: Mt. Duseoung, Gobu-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/7/2013; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 52A3DC23-3C21-5453-990C-D6F509F815FE

c. scientificName: *Hypena bicoloralis*; country: South Korea; stateProvince: JN; county: Goheung; locality: Bongnae-myeon; verbatimElevation: 86; verbatimCoordinates: 34°28'45"N 127°26'41“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 4/23/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 594B6F35-B3CC-5FC0-AF8C-404AAE16610F

d. scientificName: *Hypena bicoloralis*; country: South Korea; stateProvince: JN; county: Haenam; locality: Sanho-ri, Hwawon-myeon; verbatimElevation: 60; verbatimCoordinates: 34°39'44"N 126°16'40“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/14/2023; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en;

collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A1D73ACC-D2E0-57D7-9934-60D6188E3CDF

e. scientificName: *Hypena bicoloralis*; country: South Korea; stateProvince: JN; county: Muan; locality: Mt. Seungdal; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 5/12/2003; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: ECFBFAE9-F0D6-59BE-A197-7149736154DF

Distribution: Korea, Japan, Russian Far East.

Notes: Fig. 5f.

Hypena mandarina Leech, 1900

Materials

a. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: GN; county: Hamyang; locality: Mt. Jiri, Macheon-myeon; verbatimElevation: 760; verbatimCoordinates: 35°21'18"N 127°38'08“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/13/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 11093478-E51F-5491-AEEB-794BF5134E59

b. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: GN; county: Hamyang; locality: Mt. Jiri, Macheon-myeon; verbatimElevation: 760; verbatimCoordinates: 35°21'18"N 127°38'08“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/13/2009; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: E41D8B6B-3BF6-56CA-BC9E-287CEF9C3F6E

c. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: GN; county: Hadong; locality: Hwagae-myeon; verbatimElevation: 702; verbatimCoordinates: 35°18'21"N 127°38'11“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/21/2009; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: ED53C42B-25EF-5B05-BB0D-A909EAD9AFD9

d. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: GN; county: Hamyang; locality: Mt. Jiri, Macheon-myeon; verbatimElevation: 760; verbatimCoordinates: 35°21'18"N 127°38'08“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/26/2008; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 5F7D0FC7-2FA0-5A2A-8670-E44C06E838DB

e. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: GN; county: Hadong; locality: Hwagae-myeon; verbatimElevation: 702; verbatimCoordinates: 35°18'21"N 127°38'11“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/8/2019; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: F965802B-BDC8-5B79-9617-6D424537CC95

f. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: JN; county: Gurye; locality: Mt. Jiri, Sandong-myeon; verbatimElevation: 923; verbatimCoordinates: 35°19'22"N 127°31'23“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/15/2017; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 1729F710-688A-525F-8EAA-863DED8B10C4

g. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: JN; county: Jangseong; locality: Baegyang-ro, Bukha-myeon; verbatimElevation: 663; verbatimCoordinates: 35°27'12"N 126°52'51“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/16/2021; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 3A443B10-C43F-5E5E-9B71-C515167A0825

h. scientificName: *Hypena mandarina*; country: South Korea; stateProvince: JJ; county: Seogwipo; locality: Mt. Halla, Hawon-dong; verbatimElevation: 997; verbatimCoordinates: 33°20'05"N 126°28'12“E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/26/2007; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 43DB4434-2AA0-5F1D-86FB-3ED901336B92

Diagnosis: Wingspan 29 mm. Antenna filiform, yellowish-brown; vertex and frons with erected yellowish-brown scales; labial palpi covered with obliquely erected dark brown scales on dorsal and ventral surfaces, second segment two times longer than the third segment. Thorax yellowish-brown; tegula consisting of long scales and hair-like scales. Forewing ground colour yellowish-brown; a large rhomboidal dark brown medial patch, inner line blackish, bordered with whitish, outer line projected at 1/3 from costa; subterminal line whitish, undulating; apical streak dark brown, bank-shaped. Hindwing yellowish-brown; a large dark brown discal dot. Abdomen greyish-brown with dark brown erected scales on the middle of 1st to 4th terga. **Male genitalia.** Uncus relatively short, hooked, apex pointed. Tegumen hood-shaped; tuba analis basally strongly sclerotised; juxta narrow with both sides extended and heads facing up; saccus long, semi-rounded. Valva simple, weakly sclerotised, medially expanded; costal margin medially swollen, ventral margin thin, sclerotised, largely undulating; sacculus with a small, sharply-pointed dorsal arm, ventral margin medially weakly invaginated; basally a relatively thin division of clavus. Aedeagus long, rod-shaped,

anteriorly with dense spicules; vesica large, tubular, cornuti two patches of spines and a large sclerotised spine.

Distribution: Korea, China.

Notes: This is the first record for the Korean fauna. The DNA barcode of *Hypena mandarina* was first registered in this study (GenBank accession No. PV274489, PV274490). The p-distance with *H. proboscidalis* and *H. tamsi* was 9.79%, while the lowest genetic distance (5.71%) was recorded for *H. stygiana* (Figs 6a, 8e, f).

Hypena melanica (Sugi, 1959)

Materials

a. scientificName: *Hypena melanica*; country: South Korea; stateProvince: GW; county: Hoengseong; locality: Anheung-ri, Anheung-myeon; verbatimElevation: 510; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/3/2016; individualCount: 3; sex: males; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: C5607882-C817-5550-AED0-9AC099CA2024

b. scientificName: *Hypena melanica*; country: South Korea; stateProvince: GW; county: Hoengseong; locality: Anheung-ri, Anheung-myeon; verbatimElevation: 510; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 8/3/2016; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 19BBAD01-749B-5A9A-8181-501F9755F43C

c. scientificName: *Hypena melanica*; country: South Korea; stateProvince: GW; county: Chuncheon; locality: Jiam-ri, Sabuk-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/14/2014; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4EF1315A-B4DE-5798-89BC-8330563A9E7C

d. scientificName: *Hypena melanica*; country: South Korea; stateProvince: CB; county: Danyang; locality: Mt. Soback; verbatimElevation: 530; verbatimCoordinates: 36°59'N 128°28'E; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/21/2005; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sei-Woong Choi; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 4DBC88A9-F29F-5AB6-AFD5-DD2DD4ED4F8A

e. scientificName: *Hypena melanica*; country: South Korea; stateProvince: GN; county: Namhae; locality: Murim-ri, Idong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 6/10/2013; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: A1BD5A1A-F769-5985-B19D-E035CF44F65E

f. scientificName: *Hypena melanica*; country: South Korea; stateProvince: GN; county: Namhae; locality: Murim-ri, Idong-myeon; samplingProtocol: Ultraviolet bucket trap; samplingEffort: 6 trapping hours; eventDate: 7/8/2013; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Choi, Sei-Woong; disposition: Mokpo National University; identifiedBy: Sung-Soo Kim; dateIdentified: 2024; modified: 3/30/2025; language: en; collectionCode: Insects; basisOfRecord: PreservedSpecimen; occurrenceID: 0D7AAC6B-F89B-5D89-9331-B515512CD789

Distribution: Korea, Japan.

Notes: Fig. 6b.

Analysis

Phylogeny of *Hypena*

A phylogenetic analysis was performed on 15 species of the genus *Hypena* from the Palearctic region, including 11 species found in Korea (Fig. 11). Two species from the sister subfamily Herminiinae, *Zanclognatha lunalis* and *Paracolax tristalis*, were used as the outgroup. The results indicated that *Hypena* forms a monophyletic taxon. The ingroup was divided into three species groups; however, the supporting value was low (54%), suggesting a single species group instead.

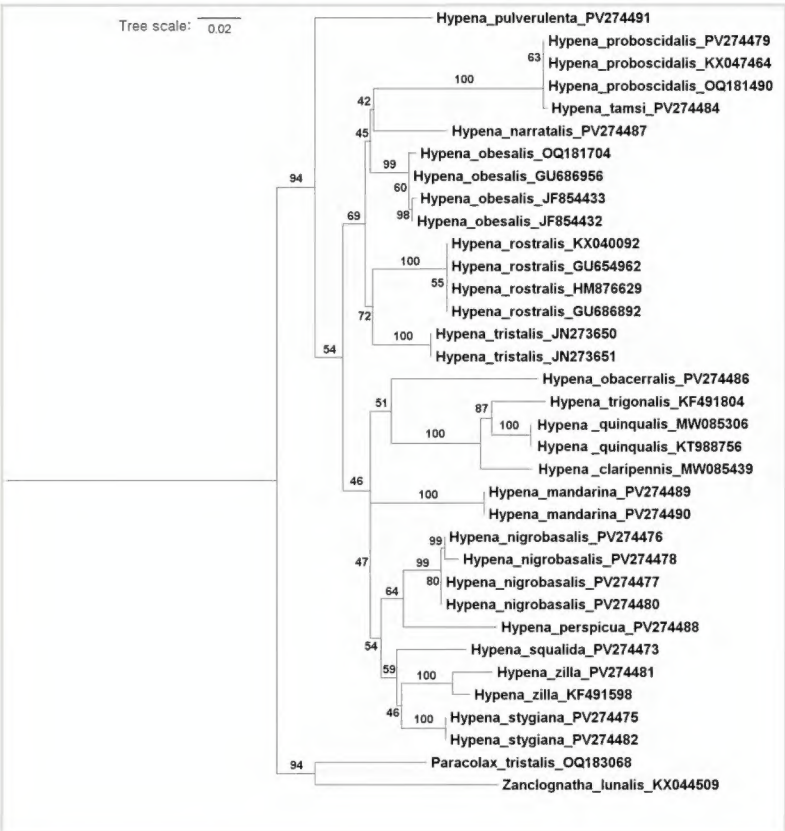

Figure 11. doi

A phylogenetic analysis was conducted on 15 species of the genus *Hypena*, along with two species, *Zanclognatha lunalis* and *Paracolax tristalis* as the outgroup. The phylogenetic tree was constructed using the Maximum Likelihood (ML) method in IQ-tree 1.6.2, with the GTR+F+I+G4 model chosen, based on the Bayesian Information Criterion (BIC).

Acknowledgements

We sincerely appreciate the invaluable contributions of Dr. Ju-A Jeon and Mr. You-Hyun Baek from Butterfly Farm, Sacheon, for generously providing the material. We also extend our deepest gratitude to the editor and reviewers for their insightful comments and suggestions. The study was supported by a grant from the National Institute of Biological Resources (NIBR), funded by the Ministry of Environment (MOE) of the Republic of Korea (NIBR202402202)

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Supplementary material

Suppl. material 1: List of the species included in our analyses and information about the sources of materials doi

Authors: Dahee Jin, Sung-Soo Kim, Bora Shin, Sei-Woong Choi
Data type: genomic
Brief description: List of the species included in our analyses and information about the sources of materials, including collection locality, voucher and accession number in GenBank.
Download file (16.08 kb)